

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

**UNITED STATES PATENT AND TRADEMARK OFFICE**

**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Ex parte GREGORY MICHAEL FREES, ANDREW KEITH HANLON  
and DANIEL ROBERT STACER

Appeal No. 2006-2591  
Application No. 09/191,577

ON BRIEF

**MAILED**

NOV - 8 2006

U.S. PATENT AND TRADEMARK OFFICE  
BOARD OF PATENT APPEALS  
AND INTERFERENCES

Before KRASS, RUGGIERO, and HOMERE, Administrative Patent Judges.

KRASS, Administrative Patent Judge.

This is a decision on appeal from the final rejection of claims 1-51.

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The invention pertains to a mounting interface for a spindle motor, best illustrated by reference to representative independent claim 1, reproduced as follows:

1. A mounting interface for providing a steadfast relationship between a motor and a baseplate, the mounting interface comprising at least three surface points forming a single plane acting as a common boundary between the motor and the baseplate, positions of the at least three surface points being selected to affect a vibrational characteristic of the motor.

The examiner relies on the following references:

Merriman, Jr. (Merriman) 5,126,607 June 30, 1992

Kirkwood 6,045,112 Apr. 04, 2000  
(filed Mar. 20, 1998)

Claims 1-4, 6-8, 31, 33, 34, and 36-38 stand rejected under 35 U.S.C. § 102(e) as anticipated by Kirkwood.

Claims 5, 9-30, 32, 35, and 39-51 stand rejected under 35 U.S.C. § 103. As evidence of obviousness, the examiner offers Kirkwood with regard to claims 5, 16-23, 32, and 35, adding Merriman with regard to claims 9-15, 24-30, and 39-51.

Reference is made to the briefs and answer for the respective positions of appellants and the examiner.

OPINION

A rejection for anticipation under section 102 requires that the four corners of a single prior art document describe every element of the claimed invention, either expressly or inherently, such that a person of ordinary skill in the art could practice the invention without undue experimentation. In re Paulsen, 30 F.3d 1475, 1478-79, 31 USPQ2d 1671, 1673 (Fed. Cir. 1994).

The examiner applies Kirkwood to independent claim 1 as follows:

In Figure 1 of Kirkwood, a baseplate (mounting surface) 50 is in a steadfast relationship with motor 22 mounted thereon. A mounting interface, e.g., upper motor cover 54, has at least three surface points, protrusions 58, which lie on a common plane, and these surface points act as a common boundary between motor 22 and baseplate 50. The positions of these protrusions 58 are selected to affect a vibrational characteristic of the motor, as claimed.

Appellants argue that Kirkwood does not disclose the mounting interface having at least three surface points selected to affect a vibrational characteristic of the motor.

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We agree with the examiner.

The mounting surface, viz., the top edge of upper motor cover 54 has four protrusions 58 upon which rest protrusions 48 of the isolator 40 in Kirkwood. These protrusions 58 clearly constitute "at least three surface points." Moreover, since Kirkwood is concerned with reducing vibrations from a motor (column 1, lines 33-36; column 3, lines 55-58; column 4, lines 40-48) and the protrusions 48 and 58 are employed to this end, it is clear that the positions of the protrusions are "selected to affect a vibrational characteristic of the motor," as claimed.

Appellants also argue that, unlike the instant invention (claims 31, 33-36, 38, and 39), Kirkwood does not provide for a method of reducing acoustic dynamics of a spindle motor (page 9-principal brief).

Again, we disagree with appellants. Not only does Kirkwood's device reduce vibration in the motor, it describes the "undesirable effects" (column 1, line 33) caused by that vibration, one of those effects being an "audible noise" (column 1, line 36), and the reduction in vibration also results in a reduction of acoustic dynamics, as claimed.

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With respect to claim 37, appellants argue that Kirkwood does not describe the surface points as being formed of a "predetermined material, the predetermined material being chosen to reduce acoustical noise," as claimed.

We agree with the examiner that Kirkwood discloses, at column 1, lines 33-40, that vibrations can cause acoustical noise, and, at column 7, lines 9-12, that "selection of an appropriate isolating material is made in consideration of the requirements or needs as determined for each application." That appears to strongly suggest that a predetermined isolating material (such as would be used in Kirkwood's protrusions and shroud 86) is chosen to reduce acoustical noise, as claimed.

With regard to claim 46, appellants argue that Kirkwood fails to disclose the claimed "damping ring disposed on an inner side and between at least three surface points, ...". Since this is appellants' sole argument with regard to this claim, we find it totally unpersuasive since the claim is rejected under 35 U.S.C. § 103 over a combination of Kirkwood and Merriman, with Merriman relied on by the examiner for the deficiency of Kirkwood regarding the damping ring, and appellants have not addressed Merriman either in the principal brief or in the reply brief.

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With regard to claims 5, 16-23, 32, and 35, the examiner also rejects these claims in view of Kirkwood, alone, but now bases the rejection on 35 U.S.C. § 103. Taking independent claim 16 as representative, the examiner asserts that Kirkwood discloses a mounting interface, for the reasons *supra*, but recognizes that Kirkwood does not disclose the data storage system comprising a storage medium, an actuator, and a spindle motor for rotating the storage medium. The examiner concludes, however, that it would have been obvious to incorporate the mounting interface of Kirkwood into a data storage system comprising a storage medium, an actuator, and a spindle motor for rotating the storage medium because doing so "would reduce vibrations of the spindle motor as well as the acoustical noise" (answer-page 4).

With regard to dependent claim 5, requiring a "reduced contact area" between the mount flange and the baseplate, wherein the reduced contact area lowers the rigidity of the mount flange and lowers the resonant frequencies, the examiner takes "Official Notice" that it was well known to lower the resonant frequencies by reducing the contact areas between the motor and the

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baseplate, so it would have been obvious to lower the resonant frequencies by reducing the contact areas between the motor and the baseplate since "lowering the resonant frequencies would prevent a possible damage to the motor and the disk attached to it" (answer-page 5).

While appellants challenge the examiner's assertion of "Official Notice" (see the top of page 12 of the principal brief), appellants do not appear to argue the limitations of independent claim 16 separately. Rather, they merely restate the examiner's rejection (bottom of page 13 of the principal brief) and generally contend that the proposed modification to Kirkwood would not have been made (top of page 14 of the principal brief). Accordingly, we will sustain the rejection of claim 16 under 35 U.S.C. § 103.

With regard to the rejection of claim 5, it is reversible error when an examiner judicially notices a feature as being old in the art and such is challenged and the examiner fails to cite the well known thing on which he/she relies. Ex parte Nouel, 158 USPQ 237 (PTO Bd. Of App 1967).

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In the instant case, in response to appellants' challenge, the examiner cites U.S. Patent No. 5,811,821 to Alexander et al. (Alexander) (see page 8 of the answer). However, the examiner only cites this reference for a showing of a mounting surface including at least three surface points forming a single plane acting as a common boundary between the motor and the baseplate, wherein positions of the at least three surface points are selected to affect a vibrational characteristic of the motor. The examiner never discusses how Alexander is alleged to rebut appellants' challenge to the taking of Official notice by showing how Alexander establishes that it was well known to lower the resonant frequencies by reducing the contact areas between the motor and the baseplate. However, while the examiner did not properly assert and then give a proper citation to establish that of which Official notice was taken, we will still sustain the rejection of claim 5 under 35 U.S.C. § 103 because it is our view that Kirkwood, alone, establishes the obviousness of the claimed subject matter.

Kirkwood provides for the at least three surface points, i.e., a "reduced contact area," for reducing vibration. The reduced vibration result is a lowering of resonant frequencies, as claimed, because vibrations are caused by resonant frequencies.

Appellants argue the limitations of claim 22, regarding a "predetermined material," separately, and assert that the material selected for the mount pads is one parameter that allows optimization of a desired frequency shift (page 14-principal brief). However, there is nothing in claim 22 regarding "optimization of a desired frequency shift," and, since this is a similar limitation as that discussed *supra* with regard to claim 37, we find for the examiner for the reasons discussed *supra* regarding the "predetermined material" and its affect on acoustical noise.

With regard to claim 32, appellants argue, at page 14 of the principal brief, that Kirkwood fails to describe the formation of a mounting interface between a spindle motor and a baseplate wherein it further comprises forming the mounting interface on the baseplate. Appellants assert that Kirkwood's protrusions are disposed on the motor cover that is located between the motor and

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the frame, and that Kirkwood does not even consider forming the mounting interface on the baseplate, or frame.

The examiner points out that it would have been obvious to change the position of the protrusions from the motor cover to the baseplate in Kirkwood, and we agree. Since the motor cover is in contact with the baseplate and the contact between the two is via the protrusions, it would appear reasonable to assert that the artisan would have recognized that the protrusions may be placed on either the motor cover or the baseplate and serve the same purpose. Appellants assert a difference without a distinction and do not respond to the examiner's assertion of obviousness to place the protrusions on either the motor cover or the baseplate. Accordingly, we will sustain the rejection of claim 32 under 35 U.S.C. § 103.

With regard to claim 35, this claim comprises limitations similar to those of claim 5, *supra*, regarding "the reduced contact area lowering resonant frequencies." For the reasons *supra*, we will sustain the rejection of claim 35 under 35 U.S.C. § 103.

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Appellants turn to the rejection of claims 9-15, 24-30, 39-45, and 47-51 under 35 U.S.C. § 103, at page 15 of the principal brief. In particular, appellants argue that the combination of references is improper because Kirkwood provides no suggestion to be combined with a device that provides a circular step insert which mounts on an isolation member located between a stepping motor and a frame, and Merriman provides no suggestion for a combination with a device that provides a reduction in motor vibration by using protrusions to reduce the surface area between a motor and a mounting flange.

We will sustain the rejection of claims 9-15, 24-30, 39-45, and 47-51 under 35 U.S.C. § 103 because the examiner has set forth a reasonable rationale for making the combination ("obvious...to provide the mounting interface of Kirkwood with the damping ring and seal as taught by Merriman...motivated to provide the mounting interface of Kirkwood with the damping ring and seal...as it would isolate the motor from the baseplate and provide a circular locating step (column 2, lines 23-27 and lines 40-45))" (answer-page 6), while appellants' argument appears to be an argument against the references individually, rather than a rebuttal of the examiner's rationale for the combination. That is, appellants argue that Kirkwood lacks a circular step insert

and Merriman lacks protrusions for use in reducing motor vibration, but this argument, *per se*, is not a persuasive argument against a rejection based on a combination of references.

At page 16 of the principal brief, appellants do argue the combination but leave us unconvinced of any error in the examiner's rationale for making the combination of Kirkwood and Merriman. Appellants assert that the examiner's motivation for the combination, i.e., isolating the motor from the baseplate and providing a circular locating step, is insufficient because Merriman already provides this as the benefit of the invention of Merriman itself, so it is not a motivation to combine Merriman with Kirkwood.

We disagree. Since the two references are so closely related in their desire to prevent, reduce, or isolate vibrations in a motor environment, the skilled artisan would naturally take in all that each of these references discloses as applicable to the other. Thus, if Merriman teaches that a damping ring and seal structure is an additional way of isolating motor vibration, it would appear reasonable that such a structure would have applicability as an additional vibration isolator in the structure of Kirkwood. Appellants have offered nothing to

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convince us of Merriman's inapplicability to the Kirkwood device, especially in view of the examiner's explanation (at page 9 of the answer) that Merriman's damping ring and seal would replace members 48 (perhaps the examiner intended Kirkwood's retaining ring isolator 40, which includes members 48), which do not provide sealing, in Kirkwood's motor to provide damping and sealing. Although appellants filed a reply brief, they do not offer a response to this reasoning by the examiner. As such, and in view of the examiner's somewhat reasonable rationale, appellants' arguments are not convincing of nonobviousness.

Thus, we will sustain the rejection of claims 9-15, 24-30, and 39-51 under 35 U.S.C. § 103.

Having carefully considered all of appellants' arguments but finding none sufficiently convincing to overcome the examiner's prima facie case of anticipation and obviousness, we sustain the rejection of claims 1-4, 6-8, 31, 33, 34, and 36-38 under 35 U.S.C. § 102(e) and we sustain the rejection of claims 5, 9-30, 32, 35, and 39-51 under 35 U.S.C. § 103.

Accordingly, the examiner's decision is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

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AFFIRMED

*Errol A. Krass*  
ERROL A. KRASS )  
Administrative Patent Judge )  
 )  
*Joseph F. Ruggiero*  
JOSEPH F. RUGGIERO ) BOARD OF PATENT  
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